

NRM MISC

RP-NRM
TIMBER CONVERSION
Grades and Specifications
Ties

REVIEW OF CROSS-TIE SPECIFICATIONS

APRIL 15, 1942

These are the latest cross-tie specifications, as well as the prices in effect at the present time, as furnished to us by the following railway companies:

Chicago, Milwaukee, St. Paul and Pacific Railroad Company
Great Northern Railway Company
Northern Pacific Railway Company
Spokane International Railroad Company
Union Pacific System:
 Oregon Short Line Railroad Company
 Oregon-Washington Railroad & Navigation Company

Information compiled by the
Division of Forest Products, Northern Rocky
Mountain Forest and Range Experiment Station,
Missoula, Montana.

CHICAGO, MILWAUKEE, ST. PAUL AND PACIFIC RAILROAD COMPANY

Specifications for Western Cross Ties

KINDS OF WOOD Douglas-fir and larch.

QUALITY All ties shall be free from any defects that may impair their strength or durability as cross ties. No ties shall contain decay in any form; ties must be free from bark, shakes, splits, cross-grain, large and numerous knots, and dark stain. Any tie showing indication of any separation of annual rings, pitch rings, or seams will be thrown out; and ties from dead, fire-killed, season-checked, or worm-eaten timber will also be thrown out. No ties accepted with grain having slant greater than one in fifteen.

RESISTANCE TO WEAR

Ties shall be compact wood throughout the top fourth of the tie, where any inch of any radius from the pith shall have not less than one-third summerwood in six or more rings of annual growth, or not less than one-half summerwood in fewer rings. Ties of coarse wood having fewer rings or less summerwood will not be accepted.

MANUFACTURE All ties shall be straight, full-sawed, cut square at the ends, and have bottom and top parallel. No wane allowed and no pole ties accepted.

DIMENSIONS Ties shall be 7" x 8" - 8' long. Ties varying one inch or more under, or one inch over, 8 feet long will not be accepted. Ties one-half inch over in thickness or one-half inch over in width, will be degraded or rejected. All face measurements will be made between 20 and 40 inches from the middle of the tie.

PRICES Not buying in the Montana-Idaho territory at present.

GREAT NORTHERN RAILWAY COMPANY

Specifications for Cross Ties

KINDS OF WOOD White fir, larch, ponderosa pine, and lodgepole pine.

QUALITY All ties shall be made from sound, live timber, free from any defects that may impair their strength or durability as cross ties, such as decay, pitch seams, splits, shakes, holes, large or numerous knots, grain with slant greater than one in fifteen, or other imperfections.

A large knot is one exceeding in width more than one-fourth of the width of the surface on which it appears, but such a knot may be allowed if it occurs outside of the sections of the tie between 20 inches and 40 inches from its middle. Numerous knots are any number equalling a large knot in damaging effect. A shake is a separation of one ring of annual growth from another. A split is a break across annual rings. Ties having such defects will not be accepted.

MANUFACTURE All ties shall be straight, well hewed, slabbed or sawed, cut square at the ends, and have bottom and top parallel. All hewed and slabbed ties must be peeled entirely free of bark. No ties will be accepted having the pith or heart in any corner.

DIMENSIONS AND PRICES

All ties shall measure as follows throughout both sections between 20 and 40 inches from the middle of the tie:

<u>Grade</u>	<u>Hewed or sawed top and bottom</u>	<u>Sawed four sides</u>	<u>Price paid on right-of-way</u>
3	6" x 8" - 8'6"	6" x 8" - 8'6"	64¢ each
4	7" x 8" - 8'6"	7" x 8" - 8'6"	75¢ each
5	7" x 9" - 8'6"	7" x 9" - 8'6"	89¢ each

Variations in lengths, thicknesses, and widths will be allowed as follows:

Length: 2 inches over and 1 inch under the designated length.

Thickness: 1/2 inch over and 1/8 inch under the designated thickness.

Width: 3 inches over and 1/8 inch under the designated width.

NORTHERN PACIFIC RAILWAY COMPANY

Specifications for Cross Ties

KINDS OF WOOD Before manufacturing ties, producers shall ascertain which of the following kinds of wood suitable for cross ties will be accepted: Douglas-fir, hemlock, ponderosa pine, larch, and lodge-pole pine.

QUALITY All ties shall be free from any defects that may impair their strength or durability as cross ties, such as decay, large splits, large shakes, large or numerous holes or knots. Ties shall be of compact wood throughout the top one-fourth of the thickness with not less than six rings of annual growth in any inch of any radius from the pith.

DIMENSIONS Before manufacturing ties, producers shall ascertain which of the following lengths, shapes, or sizes shall be accepted, and whether ties are to be hewed or sawed, and in either case whether on the sides as well as on the top and the bottom.

All ties shall be 8 feet long except size 5, which shall be 8 feet 6 inches long.

All ties shall measure as follows throughout both sections between 20 and 40 inches from the middle of the tie:

<u>Size</u>	<u>Sawed or hewed top, bottom, and sides</u>	<u>Sawed or hewed top and bottom</u>
1	None accepted	6" thick x 6" wide on top
2	6" thick x 7" wide on top <u>1/</u>	6" thick x 7" wide on top
3	6" thick x 8" wide on top <u>1/</u>	(6" thick x 8" wide on top 7" thick x 7" wide on top
4	7" thick x 8" wide on top	7" thick x 8" wide on top
5	7" thick x 9" wide on top	7" thick x 9" wide on top
	<u>1/</u> None desired.	

MANUFACTURE All ties shall be straight, well hewed or sawed, cut square at the ends, have bottom and top parallel, and have bark entirely removed.

INSPECTION Ties will be inspected after delivery at suitable and convenient places satisfactory to the railroad, which reserves the right to inspect ties at points of shipment or at destination.

Inspectors will make a reasonably close examination of the top, bottom, sides, and ends of each tie. Each tie will be graded independently without regard for the grading of others in the same lot. Rafted or boomed ties too muddled for ready examination will be rejected. Ties handled over hoists shall be turned over as inspected.

A large hole is one more than 1/2" in diameter and 3" deep within, or more than 1" in diameter and 3" deep outside the sections of the tie between 20" and 40" from its middle. Numerous holes are any number equaling a large hole in damaging effect. Such holes may be caused in manufacture or otherwise.

A large knot is one exceeding in width more than one fourth of the width of the surface on which it appears; but such knot may be allowed if it occurs outside the sections of the tie between 20" and 40" from its middle. Numerous knots are any number equaling a large knot in damaging effect.

A shake is a separation of one ring of annual growth from another. One which is not over 4" long or 1/4" wide will be allowed.

A split is a break across annual rings. One which is not over 5" long will be allowed provided satisfactory anti-splitting devices have been properly applied.

A tie will be considered straight: (1) When a straight line along the top from the middle of one end to the middle of the other end is entirely within the tie; (2) When a straight line along a side from the middle of one end to the middle of the other is everywhere more than 2" from the top and the bottom of the tie.

A tie is not well hewed or sawed when its surfaces are cut into with score marks more than 1/2" deep or when its surfaces are not even.

The top and bottom of a tie will be considered parallel if the difference in the thicknesses at the two sides or ends does not exceed one-half (1/2) inch; that is, one side may be seven and one-quarter (7 1/4) inches while the other is six and three-quarters (6 3/4) inches wide; or one end may be six and three-quarters (6 3/4) inches while the other is seven and one-quarter (7 1/4) inches thick.

The thicknesses and widths specified are the minima for the standard sizes. Ties over two (2) inches longer will be rejected, but occasional ties not more than one (1) inch shorter will be accepted. Ties over one (1) inch thicker or wider than the standard sizes will be rejected.

All thicknesses and widths apply to the sections of the tie between 20" and 40" from the middle of the tie. All determinations of width will be made on the top of the tie, which is the narrower of the horizontal surfaces.

PRICES

Effective March 13, 1942, f.o.b. cars on the Northern Pacific Railway and the Camas Prairie Railroad in Montana, Idaho, and eastern Washington:

Size 3	6"x 8"x 8')	\$21.00 per M for fir, larch, and pine. 20.00 per M for hemlock.
Size 4	7"x 8"x 8')	
Size 5	7"x 9"x 8'6")	

SPOKANE INTERNATIONAL RAILROAD COMPANY

Specifications for Cross Ties

KINDS OF WOOD Douglas-fir and larch.

QUALITY Ties must be of good, sound, live timber, free from any defects that will impair their strength or durability as cross ties, such as decay, large splits, large shakes, or large knots.

MANUFACTURE Grades 1, 2, and usable rejects must be exactly eight (8) feet long, with ends sawed square, peeled, well hewed on both sides, free from score hacks, of uniform thickness, hewed parallel, and out of wind.

DIMENSIONS AND PRICES

All ties shall measure as follows throughout both sections between 20 and 40 inches from the middle of the tie. Ties over eight (8) inches thick or eleven (11) inches on the face will not be accepted. Ties over or under 2 inches in length will be degraded or rejected.

<u>Grade</u>	<u>Hewed or slabbed top and bottom</u>	<u>Sawed four sides</u>	<u>Price paid on right-of-way</u>
1	7" x 7" - 8'	7" x 9" - 8'	89¢ each
2	7" x 6" - 8'	7" x 8" - 8'	45¢ each

Ties will be inspected on small ends. No peeling will be allowed along right-of-way. The company will not accept to exceed ten percent of No. 2 ties.

UNION PACIFIC SYSTEM

OREGON SHORT LINE RAILROAD COMPANY

Specifications for Cross Ties

Sawed Ties

KINDS OF WOOD Douglas-fir, larch, lodgepole pine, and ponderosa pine.

QUALITY Ties must be sawed out of sound, straight, live timber, and must be free from bark, splits, shakes, cross grain, loose or decayed knots, pitch seams, or any other imperfections which may impair their strength or durability.

DIMENSIONS Ties must be seven (7) inches thick, nine (9) inches wide, and eight (8) feet long. A variation of one inch over in length, one-half inch over in thickness, and two inches over in width will be permitted.

A small percentage of No. 2 ties will be accepted. Cull ties will be accepted only by special agreement.

The above specifications are in accordance with Form 2757 issued by the Union Pacific System.

PRICES PAID F.O.B. CARS (O.S.L. TRACKS)

In the Idaho territory, 7" x 9" - 8' sawed ties:

Douglas-fir	\$24.00 per M
Other species	20.00 per M

UNION PACIFIC SYSTEM

OREGON-WASHINGTON RAILROAD & NAVIGATION COMPANY

Specifications for Cross Ties

KINDS OF WOOD Red or yellow fir (Douglas-fir), larch, and pine.

QUALITY At the present time all ties that are acceptable to the company must be purchased under "select common" grade, West Coast Lumbermen's Grading Rule Booklet No. 11, paragraph 205, which reads as follows:

"SELECT TIES - Must be sound, square-edged, not less than six annual rings per inch, on any radius from the pith, over the top one-fourth of the tie. Will admit:

"Knots - sound tight, 1/4 width of face.

Checks - seasoning.

Pitch pockets.

Sap - not limited.

Variation in length - 1" under or over.

Variation in size - 1/8" under, 1/2" over."

DIMENSIONS Ties shall be seven (7) inches thick, nine (9) inches wide, and eight (8) feet long.

PRICES PAID F.O.B. CARS (O.W.R. & N. TRACKS)

In the Northwest District, including the Inland Empire:

Douglas-fir	\$24.00 per M
Larch	24.00 per M
Pine	20.00 per M

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October 17, 1942

Amendment

to

REVIEW OF CROSS-TIE SPECIFICATIONS

ISSUED APRIL 15, 1942

Office of Price Administration's Maximum Price Regulation No. 216 effective September 5, definitely freezes cross-tie prices at the maximum price at which each railroad received delivery (for its own use) of each species and size of untreated or treated tie at the same delivery point during the first quarter of 1942. The price to Government agencies may be 10 percent above the maximum permitted for the railroad or to other purchasers of ties. Lower prices than those established by this Regulation may be charged, demanded, paid, or offered.

Up-to-date reports from all railroads contributing information used in our April 15 "Review of Cross-Tie Specifications" show no changes in specifications and practically no revision of cross-tie prices during the last six months. Consequently, the only price changes in Region 1 since April 15 can be accounted for by amending your copy of the April report in accordance with the following notes:

Chicago, Milwaukee, St. Paul and Pacific Railroad Company (p. 1)

Delete the paragraph under PRICES, and substitute: Buying of ties in the Inland Empire territory has been resumed. The basic price being paid as of October 15, f.o.b. cars C. M. St. P. & P. tracks is \$24.00 per M.

Union Pacific System, Oregon Short Line Railroad Company (p. 6)

Under PRICES PAID F.O.B. CARS, "Other species" insert: Are now paying \$20.00 per M for 7" x 9" x 8' cross ties. This price will be increased to \$24.00 per M to producers who complete their present orders based on \$20.00 per M.

With these two exceptions, prices being paid as of April 15, 1942, by each railroad operating in this region, were the same as those paid during the first quarter of this year and are effective at the present time.

Information compiled by the
Division of Forest Products, Northern Rocky
Mountain Forest and Range Experiment Station,
Missoula, Montana.